

### **REMARKS**

Claims 4 and 10-20 are pending. By this amendment, claim 4 is amended. No new matter is added. Claim 4 is amended on the basis of the descriptions from page 16, line 15 to page 17, line 4 (about the evaporator), page 19, lines 5 to 11 (about the electronic control unit), page 21, lines 4 to 13, and page 27, line 25 to page 28, line 6 (about switching the supply from the second mixed water-methanol solution tank to the evaporator and generating the mixed water-methanol gas).

The Office Action asserts that "Applicant's amendment necessitated the new ground(s) of rejection presented in [the March 3, 2005] Office Action." However, Applicants do not understand how their defining mixed water-methanol solution tanks as being "first and second" necessitated the removal of the Beshty and Tachihara references that were previously combined with the now cited alone Lovercheck reference. It appears that such an amendment could not have necessitated such a new rejection. Thus, pursuant to the Manual of Patent Examining Procedure (MPEP) section 706.07(d), Applicants respectfully request that the Examiner withdraw the finality of the outstanding Office Action.

The Office Action rejects claim 4 under 35 U.S.C. § 102(b) as anticipated by or under 35 U.S.C. § 103(a) as being obvious over Lovercheck (U.S. Patent No. 4,424,771). The Office Action also rejects claims 10-12 under 35 U.S.C. § 103(a) as being obvious over Lovercheck in view of Beshty (U.S. Patent No. 4,946,667). The Office Action also rejects claims 13-17 under 35 U.S.C. § 103(a) as being obvious over Lovercheck in view of Beshty and further in view of Marion (U.S. Patent No. 4,392,869). Claims 18-20 are rejected under 35 U.S.C. § 103(a) as being obvious over Lovercheck

in view of Beshty and further in view in view of Negishi (U.S. Patent No. 6,165,633). These rejections are traversed.

This application enables switching of the concentration of the mixed water-methanol solution instantaneously and starting/stopping of the reforming apparatus quickly while preventing the development of high-rate reaction regions by using the second mixed water-methanol solution tank, which is a tank other than the first mixed water-methanol solution tank used for normal operation. The electronic control unit controls the switching means so as to supply the water-methanol solution of the second tank to the evaporator when starting and/or stopping the methanol reforming apparatus.

In contrast, a conventional methanol reforming apparatus has one mixed water-methanol solution tank. In such a case, it is impossible to start/stop the methanol reforming apparatus quickly while preventing the development of high-rate reaction regions.

Lovercheck discloses a method of starting an internal combustion engine using alcohol fuel at a low temperature. Hydrogen gas is generated from the alcohol using the reactor (30, 62) in advance, and is absorbed into the hydride reactor (39, 63) made from the hydrogen-storing alloy. When starting the engine at a low temperature, the hydrogen-storing alloy is heated so as to release the hydrogen gas, and the hydrogen gas is supplied to the engine.

Regarding the tank, Lovercheck discloses 3 embodiments:

A, tank 3 (methanol), see Fig. 1 and Fig. 3

B, tank 3 (gasoline), see Fig. 1, Fig. 3, and column 7, lines 14-15

C, tank 3 and additional tank 44, see Fig. 2, and column 7, lines 15-17

In embodiments A and B, only one tank is provided. Therefore, heating the reactors 30, 62 should take a lot of time.

In embodiment C, two tanks are provided and only the liquid alcohol storage tank 3 supplies fuel for the reactor. The additional tank 44 does not supply fuel for the reactor. The alcohol and gasoline are different in the catalyst and the temperature of reaction when they are reacted, so different reactors should be used for them. In embodiment C (Fig. 2), because the reactor 30 is shared, the additional tank 44 should not be a tank storing fuel for reacting. Lovercheck teaches that the valves 7, 14' and 20 are closed and the gasoline is fed through the line 2 to the engine 15; see Col. 7, lines 19-22. That is, the additional tank 44 is storing fuel for the engine 15, not for the reactor. Additionally, Lovercheck teaches that the additional tank 44 is in fluid flow communication with line 2. The gasoline has to pass through the line 2 in order to bypass the reactor and to be supplied to the engine 15 directly. Furthermore, as an example of connecting the additional tank 44 to the line 2, connecting the additional tank 44 to the line 4 is disclosed. This enables sharing of the pump because the fuel passes through the line 4. Another pump would be required if the additional tank were connected only to the line 4.

The fuel from the additional tank 44 does not flow through the evaporator and reactor. That is, even if using this reference, it is impossible to have "an electronic control unit that controls the switching means so as to supply the mixed water-methanol solution from the second mixed water-methanol solution tank to the evaporator when starting and/or stopping the methanol reforming apparatus".

Even in embodiment C, Lovercheck does not have "an electronic control unit that controls the switching means so as to supply the mixed water-methanol solution from the second mixed water-methanol solution tank to the evaporator when starting or/and stopping the methanol reforming apparatus". Therefore, only the tank 3 supplies the fuel for the reactor and heating the reactor would take a lot of time.

Thus, the presently claimed invention is not anticipated by Lovercheck.

Beshty, Marion and Negishi fail to make up for the deficiencies in Lovercheck. Thus it is respectfully submitted that the presently claimed invention would not have been obvious over Lovercheck alone, or in any combination with any of Beshty, Marion and Negishi.

Reconsideration and withdrawal of the rejections under 35 U.S.C. § 102(b) and under 35 U.S.C. § 103(a) are respectfully requested.

Applicants respectfully submit that this application is in condition for allowance and such action is earnestly solicited. If the Examiner believes that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below to schedule a personal or telephone interview to discuss any remaining issues.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any additional fees may be charged to Counsel's Deposit Account 01-2300, **referencing attorney docket number 107439-00049.**

Respectfully submitted,

A handwritten signature in black ink, reading "Robert K. Carpenter". The signature is written in a cursive style with a horizontal line extending from the end of the name.

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